

Application Serial No. 10/010,293
Date June 9, 2006
Reply to Office Action dated April 14, 2006

Page 5 of 8

REMARKS

After entry of this Amendment, claims 5, 6, 12, 31, 32, and 38-40 are pending in the application. Claims 5, 12, and 38 have been amended to more particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Reconsideration of the application is respectfully requested in view of the amendments defined herein and the following remarks.

In the Office Action dated April 14, 2006, claims 5, 12, and 38 are objected to for informalities in the claims. Claims 5, 12, and 38 have been amended to correct the informalities objected to by the Examiner.

Claims 5, 6, 12, 31, 32, and 38-40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Suda (JP2001-047180) in view of Kimura et al (JP2001-141170). The Examiner contends that Suda discloses all of the claimed invention except for the contact member having means for passing through an open end of the end-form. For the following reasons, it is respectfully submitted that that subject matter of Applicant's invention as recited in claims 5, 6, 12, 31, 32, and 38-40 is patentable over Suda in view of Kimura.

The present invention, as recited in claims 5, 6, 12, 31, 32, and 38-40 discloses a fluid quick connector comprising an electrically conductive connector housing configured to mount with an endform and electrically conductive contact member mounted in the housing that contacts the endform to electrically connect the endform and the connector housing. The contact member includes an annular ring mounted in the housing bore, an arm extending from the annular ring into the endform bore for contact with the inner surface of the endform, and at least one locating member that extends from the annular ring discrete from the arm for centering the annular ring relative to the endform. The contact member in the present invention, recited in claims 12 and 38, is mounted in an electrically conductive connector housing. Due to the at least one locating member, the contact member is centered in a secure and continuous electrically conductive path between the electrically conductive endform and the electrically conductive connector housing. As recited in claims 5 and 31, the arm portion of the contact member has a bent end. The arm and bent portion includes a beam portion that extends from the annular ring

Application Serial No. 10/010,293
Date June 9, 2006
Reply to Office Action dated April 14, 2006

Page 6 of 8

portion and a reverse tapered surface that extends between the beam portion and a tip end. The tip end extends angularly from an edge at the end of the reverse tapered surface.

Suda discloses an electroconductive male endform (4) inserted into the bore at one end of an electroconductive connector housing (9). A fuel hose (3) is connected to the connector housing (9) at the opposing end. An electroconductive washer member (18) is elastically abutted against the front of the male endform (4). The apparatus discloses a grounding passage for releasing electrification of the fuel hose (3) to the grounding side from the connector housing (9) through the contact member (18) and the male endform (4). See Abstract. As shown in Fig. 2, the contact member (18) in the form of a washer is placed at the end of the male endform (4), directly contacting the electroconductive male endform (4). When the male endform (4) is fully inserted in the connector housing (9), the contact member (18) is forced against a shoulder in the inner surface of the electroconductive connector housing (9) and electric contact exists between the housing (9), the contact member (18), and the male endform (4). However, the contact member (18) does not include a member for locating the contact member (18) in the correct position, so if the male endform (4) moves, even slightly, from the fully inserted position or off-center, the electric contact between the housing (9), the contact member (18) and the male endform (4) will be broken and the grounded connection will cease. Therefore, the contact member (18) does not include a locating member extending from the annular ring of the contact member for centering the annular ring relative to the endform (4) as recited in claims 12 and 38. The Suda reference is also devoid of an arm having a bent end as recited in claim 5 and 31.

Kimura discloses an electrically conductive endform (1) and an electrically conductive tube (3) that are connected together by a non-conductive resin connector housing (2). See Abstract. The endform (1) is inserted into the bore of a connector housing (2) and the tube (3) is inserted over the opposing end of the housing (2), as shown in Figs. 1, 2, 4, and 5. An electrically conductive contact member (4) is mounted in the bore of the non-conductive connector housing (2) to electrically connect the endform (1) and the tube (3). The contact member (4), as

Application Serial No. 10/010,293
Date June 9, 2006
Reply to Office Action dated April 14, 2006

Page 7 of 8

shown in Fig. 3 of the Kimura reference, includes four spring pieces (44), one of which the Examiner submits correlates to the arm recited in claims 12 and 38 of the present invention and the remainder of which the Examiner submits is are locating members. However, the four spring pieces (44) are identical and therefore the locating members are not discrete from the arm. Therefore Kimura is devoid of a locating member discrete from the arm, that is adapted to engage with the inner surface to center the annular ring relative to the endform as recited in claims 12 and 38.

In addition, each of the four spring pieces (44) extend from an annular ring (45) at an edge of the back taper surface (42). As shown in Fig. 3, the back taper surface (42) extends angularly from the annular ring (45) and the tip portion extends angularly from the taper back portion (42). The tapered back portion (42) of the arm is not positioned between the tip portion and a beam portion. The spring pieces (44) do not have a beam portion that extends from the annular ring, a reverse tapered surface that extends angularly from the beam portion as recited in claims 5 and 31 of the present invention.

It is respectfully submitted that the cited references, as combined by the Examiner, do not disclose a contact member mounted in an electrically conductive quick connector housing in which the contact member is in the form of an annular ring with an arm extending therefrom for engagement with an inner surface of the bore in the endform and at least one locating member extending from the annular ring discrete and distinct from the arm for centering the annular ring relative to the endform as recited in claims 12 and 38. Therefore, Applicants' invention as set forth in claims 12 and 38 includes features which are not suggested or rendered obvious by Suda, taken by itself or in combination with Kimura as posed by the Examiner. Claims 5, 6, and 39 depend from claim 12 and claims 31, 32, and 40 depend from claim 38 to include all of the features thereof. By dependency, such claims are also submitted to patentably define over any permissible combination of Suda and Kimura as posed by the Examiner. Thus, such claims are submitted to be in condition for allowance; a notice of which is respectfully requested.

Entry of this Amendment meets the provisions of 37 C.F.R. § 1.116 is

Application Serial No. 10/010,293
Date June 9, 2006
Reply to Office Action dated April 14, 2006

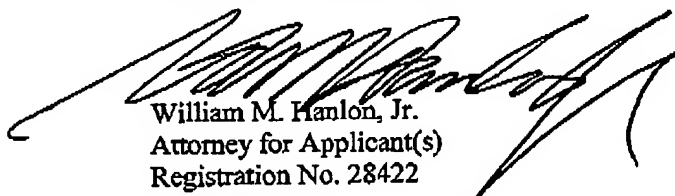
Page 8 of 8

submitted to be warranted and is respectfully requested. The amendments to claims 5, 12, and 38 are submitted to place these claims and the claims depending therefrom in allowable condition by overcoming all the objections and rejections raised by the Examiner. Alternatively, it is further submitted that this amendment places the claims in better condition for appeal in the event that the Examiner does not allow any of the claims. The amendments to claims 5, 12, and 38 are submitted to more clearly define Applicants' invention. It is further submitted that the amendments to claims 5, 12, and 38 do not introduce new subject matter or elements which would require undue consideration or a further search by the Examiner. For these reasons, it is submitted that this Amendment meets all of the requirements of Rule 37C.F.R. §1.116 for entry and consideration of this Amendment after a Final Office Action.

If the Examiner, after considering this Amendment, believes that further amendments are necessary to place the claims in allowable condition, he is invited to contact the Applicants' attorney at the telephone number listed below.

Respectfully submitted,

YOUNG, BASILE, HANLON, MacFARLANE,
WOOD & HELMHOLDT, P.C.



William M. Hanlon, Jr.
Attorney for Applicant(s)
Registration No. 28422
(248) 649-3333

3001 West Big Beaver Rd., Suite 624
Troy, Michigan 48084-3107
Dated: June 9, 2006
WMH/TMS/jml